DOCUMENT RESUME

ED 306 075 SE 050 430

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TITLE Soil Erosion. LC Science Tracer Bullet.
INSTITUTION Library of Congress, Washington, D.C. National Referral Center for Science and Technology.
REPORT NO LC-TB-88-5
PUB DATE Nov 88
NOTE 11p.
PUB TYPE Reference Materials - Bibliographies (131)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Agriculture; Citations (References); Earth Science; Educational Resources; *Indexes; Information Sources; Physical Sciences; *Reference Materials; Soil Conservation; *Soil Science

ABSTRACT

Soil erosion is the detachment and movement of topsoil or soil material from the upper part of the soil profile. It may occur in the form of rill, gully, sheet, or wind erosion. Agents of erosion may be water, wind, glacial ice, agricultural implements, machinery, and animals. Soil conservation measures require a thorough understanding of the mechanics of erosion processes. Runoff, slope, rain, wind, plant care, and the presence or absence of conservation measures are some of the factors which influence the rate of erosion. Erosion results in a deterioration in the quality of cropping and grazing land in addition to reduced productivity and increased expenditure for fertilizers. It is essential to control erosion in order to maintain productivity of the soil, to reduce sedimentation in streams and lakes, and to prevent further damage to the land by gullies and ditches. Some common methods of checking erosion are control of overgrazing, construction of barriers, contour trenching, and afforestation. This guide offers a selected bibliography of the literature in the Library of Congress on soil erosion. Organization of listings include: basic texts, handbooks, bibliographics, government publications, conference proceedings, reviews, abstracting and indexing services, technical reports, and other selected materials. (RT)

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ISSN 0090-5232

SOIL EROSION

Compiled by John F. Buydos

TB 88-5

November 1988

SCOPE: Soil may deteriorate either by the physical movement of soil particles from a given site or by the depletion of water-soluble substances in the soil which contribute to the nourishment of crop plants, grasses, trees, and other economically useful vegetation. The physical movement is generally referred to as erosion. Soil erosion is the detachment and movement of topsoil, or soil material from the upper part of the soil profile. It may occur in the form of rill, gully, sheet, or wind erosion. Wind, water, glacial ice, animals, and agricultural implements and machinery may be agents of erosion. Wind and water are the most important, especially as their effects are intensified by the disturbance of natural cover or soil position. Soil conservation measures require a thorough understanding of the mechanics of erosion processes. Factors which influence the rate of erosion include rainfall, runoff, wind, slope, plant cover, and the presence or absence of conservation measures.

Erosion brings about a deterioration in the quality of cropping and grazing land along with reduced productivity and increased expenditure for fertilizers. In extreme cases, yields become so poor that land must be taken out of cultivation. Siltation of reservoirs and rivers reduces their capacity, creating flood hazards, and the sediment is a major pollutant.

Erosion control is essential to maintain the productivity of the soil, to reduce sedimentation in streams and lakes, and to prevent further damage to the land by gullies and ditches. Some typical methods of checking erosion are afforestation on steep slopes, control of overgrazing, contour trenching or ridging, and construction of weirs and barriers or detention dams. Such measures may involve erosion mapping, land classification with respect to erosion risk, erosion modeling for predicting rates of soil loss and planning conservation work, and implementation of ways in which plant covers and crop residues affect both water and wind erosion.

This guide offers a review of the literature in the Library of Congress on soil erosion. Not intended as a comprehensive bibliography, this compilation is designed--as the name of the series implies--to put the reader "on target."

SE 050 430

INTRODUCTIONS TO THE TOPIC

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SOIL CONSERVATION (Highly relevant)
SOIL EROSION (Highly relevant)
EROSION (Relevant)
WIND EROSION (Relevant)
CONSERVATION TILLAGE (Related)
CROPPING SYSTEMS (Related)
REVEGETATION (Related)
TILLAGE (Related)
WATERSHED MANAGEMENT (Related)

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Clark, Edwin H., Jennifer A. Haverkamp, and William Chapman. Eroding soils: the off-farm impacts. Washington, D.C., Conservation Foundation, c1985. 252 p. QH545.S64C55 1985

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Applied Science & Technology Index (1913-) Z7913.I7*
See: Erosion
Soil Conservation

Bibliography of Agriculture (1942-) Z5073.U572*
See: Erosion
Erosion Control
Soil Conservation
Soil Erosion

Biological & Agricultural Index (1916-) Z5073.A46*
See: Erosion
Erosion Prevention and Control
Erosion Research
Soil Conservation

Current Technology Index (1962-) Z7913.B7*
See: Soil: Erosion

Engineering Index (1884-) Z5851.E62*
See: Soils: Erosion

Note: Consult reference librarian for location of abstracting and indexing services in the Science Reading Room

Environment Index (1971-) Z5322.E2E57*
See: Erosion
Erosion Control
Soil Conservation

Environmental Periodicals Bibliography (1972-) Z5863.E57E58*
See: Erosion
Erosion Control
Soil Conservation
Soil Erosion

Forestry Abstracts (1939-) SD1.F66*
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General Science Index (1978-) Z7401.G46*
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S590.R38
Soviet survey of world developments in soil science and agrochemistry. Titles are in English or in the original language of publication.
See: Eroziia pochv

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See especially Permuterm Subject Index for entries under Soil Loss, Soil Erosion, and Soil Conservation.

Selected Water Resources Abstracts (1968-) TC1.S45*
See: Erosion
Soil Conservation
Soil Erosion
Soil Loss

JOURNALS that often contain articles relevant to soil erosion are

Journal of Soil & Water Conservation S622.S5
Soil & Water Conservation News S623.U42
Soil Science S590.S6
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Soil Erosion

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Benbrook, Charles M. First principles: the definition of highly erodible land and tolerable soil loss. Journal of soil & water conservation, v. 43, Jan./Feb. 1988: 35-38.

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ADDITIONAL SOURCES OF INFORMATION

National Agricultural Library
10301 Baltimore Boulevard
Beltsville, Maryland 20705
Telephone: (301) 344-3755

American Society of Agricultural Engineers (ASAE)
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